IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application Number	:	10/733,686	Confirmation No. 9035
Applicants	:	Yaron ILAN, et al.	
Filed	:	December 10, 2003	
Title	:	REGULATION OF IMMUNE RESPONSES BY MANIPULATION OF INTERMEDIARY METABOLITE LEVELS	
TC/Art Unit	:	1648	
Examiner:	:	Emily M. Le	
Docket No.	:	59046.000043 (Formerly Enz-64(D2))	
Customer No.	:	21967	

RESPONSE TO RESTRICTION REQUIREMENT OF OCTOBER 6, 2004

MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

In the Office Action of October 6, 2004, the Examiner requested restriction under 35 U.S.C. § 121 to one of Groups I-III, which are purportedly distinct inventions. Applicants hereby provisionally elect Group II, which covers claims 25-49, drawn to a process of treating a disease with the administration of a reagent, according to the Office Action, with **traverse**. Applicants hereby provisionally elect the species of infection, with **traverse**. Applicants hereby provisionally elect the species of viral, with **traverse**. Applicants hereby provisionally elect the species of HCV, with **traverse**. Applicants hereby provisionally elect the species of conjugated biomolecule, with **traverse**. Applicants hereby provisionally elect the species of raising the intracellular, extracellular, or serum level of the metabolite, with **traverse**. Applicants reserve the right to file divisional application(s) directed to non-elected subject matter.

REMARKS

The outstanding Office Action requires that Applicants elect one of the following three (3) allegedly distinct inventions:

I. Claims 1-24, drawn to a process of treating a disease with the administration of a mammalian intermediary metabolite or a reagent, classified in Class 424 or 514, subclass-indeterminate because of functionally defined substance;

II. Claims 25-49, drawn to a process for treating a disease in a mammalian subject comprising obtaining cells from said subject, treating said cell with an effective amount of a mammalian intermediary metabolite or a reagent so as to raise the intracellular level of said metabolite in said cells, and transferring said treated cells to said subject; classified in Class 435, subclass 325;

III. Claims 50-62, drawn to a process for treating a disease in a mammalian subject comprising administering to said subject an effective amount of a mammalian metabolite so as to modulate or change at least one component in the immune system of said subject, classified in Class 424 or 514, subclass-indeterminate because of functionally defined substance;

Applicants respectfully request reconsideration of the Restriction Requirement in view of the following remarks concerning the elections made herein.

First, restriction between inventions is only proper when a search burden exists for the Examiner to search all of the inventions claimed. If the search and examination of an entire application can be made without serious burden, the Examiner must examine it on the merits, even though it includes claims to independent or distinct inventions (see MPEP §803.01). In the instant case, all three Groups are drawn to methods of treating disease. Further, Groups I and III are all drawn to administering a metabolite and Group II is drawn to administering a metabolite or metabolite to cells. Therefore all three Groups are related in their use of metabolites for treating disease, either directly or indirectly. In addition, both Groups I and III are classified in 424 or 514 with the same conditional subclass assignment, with Group II classified in 435/325.

All three Classes, 424, 435, and 514, encompass treatments. Therefore it is evident from overlapping method steps, similar class and subclass, and overlapping preambles, that a search of the subject matter of Groups I, II, and III does not constitute a serious search burden for the Examiner.

Secondly, the Office Action did not elucidate reasons and examples as required by MPEP 803 to support restriction between the three diseases (cancer, infection, and immune dysfunction) as distinct and independent. It is also unclear from the Office Action whether this second requirement was a restriction between inventions or a species election. Applicants note that the subject matter of the Groups focuses on administering an metabolite and as such search of the use of a metabolite will encompass several diseases including but not limited to cancer, infection, and immune dysfunction. For instance, the specification teaches that the immune system monitors both infection and metabolic processes (pp. 8). Thus the immune system, and hence infection by both bacteria and viruses, is linked to immune dysfunction. Also, the immune system is intimately involved in the regulation of tumor cells. Further the specification teaches that HCV causes both immunosuppressive and immunoreactive responses in an infected subject demonstrating the relationship between immune dysfunction and infection (pp. 9).

Thirdly, the Office Action did not elucidate reasons and examples as required by MPEP 803 to support restriction between two infectious agents (bacteria and viruses) as distinct and independent. It is also unclear from the Office Action whether this third requirement was a restriction between inventions or a species election. Additionally, it is improper to restrict between bacterial and viral infection as the preamble of the method claims centers on treatment of a disease using a metabolite or a reagent which increases metabolite levels. Also search of the use of a metabolite or reagent which increased metabolite levels would encompass both bacterial and viral infections.

Fourth, the Office Action did not elucidate reasons and examples as required by MPEP 803 to support restriction between three viruses: HBV, HCV, and HIV. All three viruses infect the same host (humans) via a similar transmission method and often co-infect an individual. Thus the three viruses share a common structure and function in accordance to *In re Harnish* 631

F.2d 716, 206 USPQ 300 (CCPA 1980) and it is inappropriate to restrict between the three viruses.

Fifth, the Office Action did not elucidate reasons and examples as required by MPEP 803 to support restriction between lipids and conjugated biomolecules. In the specification, glycolipids, lipoproteins, and glycopoteins are all included as forms of conjugated biomolecules (pp. 15). Therefore, lipids are more accurately encompassed by the genus of conjugated biomolecules and as such restriction between the two is improper.

Sixth, the Office Action has misconstrue mechanisms of action as grounds for Restriction. The metabolite or reagents may act through one, two, or all three of the following mechanisms: raising the intracellular, extracellular, or serum level of the metabolite, increasing the rate of production of said mammalian intermediary metabolite, or decreasing the rate of degradation or turnover of said mammalian intermediary metabolite. Restriction between mechanisms is improper as the instant methods are defined by the administration of a metabolite or a reagent.

In view of the above remarks, it is respectfully requested that the Restriction Requirement be withdrawn and that all claims be allowed to be prosecuted in the same patent application. In the event that the requirement is made final and in order to comply with 37 C.F.R. § 1.143, Applicants reaffirm the election with **traverse** of claims 25-49 (Group II), holding claims 1-24 and 50-62 in abeyance under the provisions of 37 C.F.R. § 1.142(b) until final disposition of the elected claims.

CONCLUSION

Applicants maintain that the restriction requirement is improper and that all pending claims, *i.e.*, claims 1-62, should be examined for patentability. If the Examiner believes that the prosecution might be advanced by discussing the application with Applicants' representatives, in person or over the telephone, we would welcome the opportunity to do so.

Respectfully submitted,

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Dated: 8/2/05

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